protecting public health

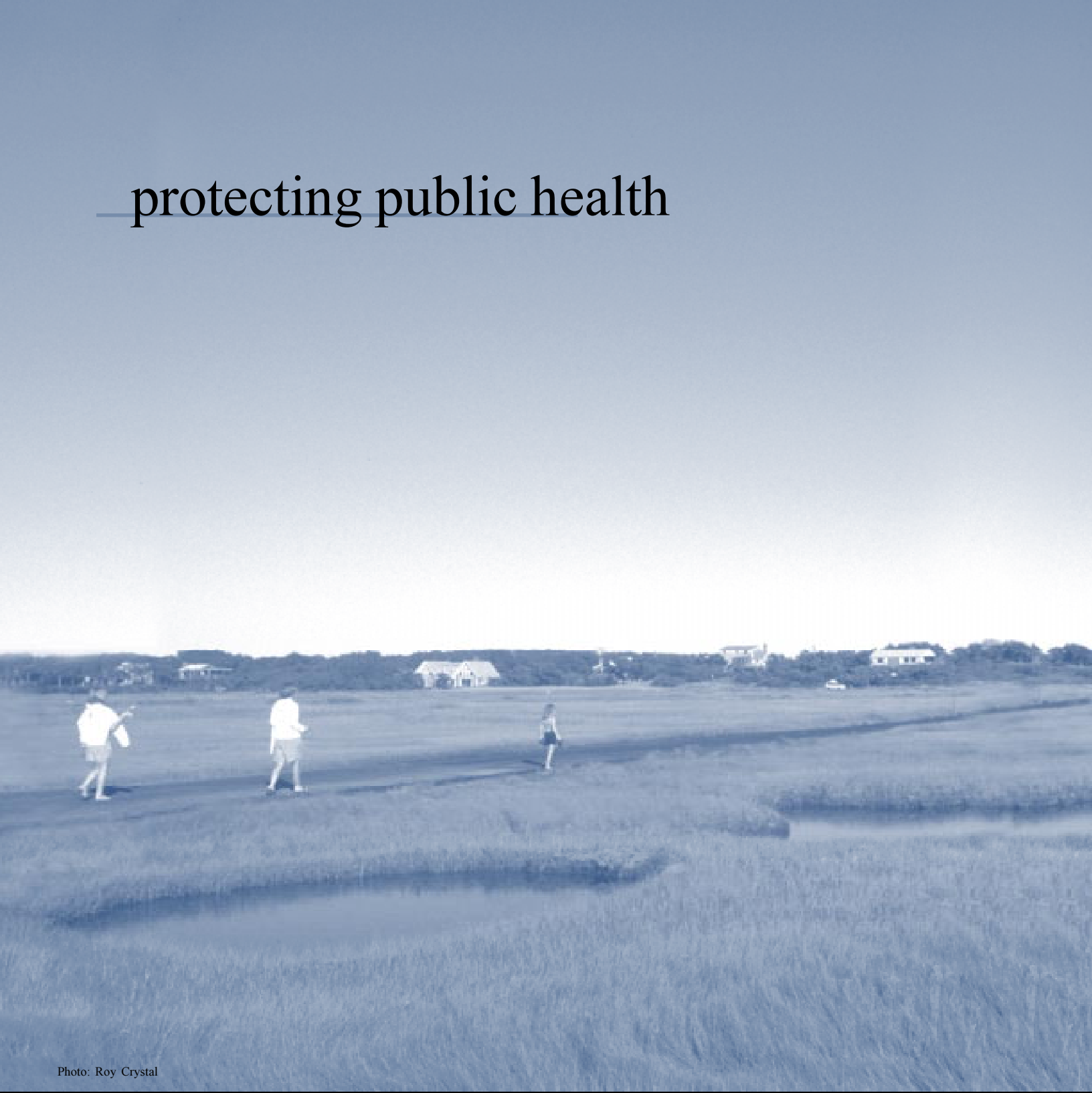


Photo: Roy Crystal

Every American has a right to healthy air, clean drinking water and freedom from toxic chemicals. Since 1970, we've made exceptional progress toward achieving this basic right for New England's residents. Our air is substantially cleaner, our rivers no longer run with untreated sewage and our drinking water is safer. We've also curbed numerous health threats like lead in gasoline and bacteria in swimming areas.

We need to do more, however, to reduce threats from smog, airborne toxics, acid rain and radon. We need to stop childhood lead poisoning and asthma. In tackling these challenges, we will adapt our strategies to reflect the changing patterns of New England's society. And, more importantly, we will continue to forge strong alliances with all of those in New England who we are working to protect.

Reducing Smog

New England has made great strides in combating summertime smog. In 1983, air quality in New England violated ground-level ozone health based standards on 90 days. During 1999, air quality violated those standards on only 35 days. This progress has been achieved thanks to major improvements at power plants, the use of cleaner-burning fuels for most vehicles, stricter tailpipe standards and a new generation of standards for trucks, buses and marine vessels (Figure 1).

But there is more work to be done. Since passage of the last Clean Air Act in 1990, EPA has tightened the health-based standards for smog to ensure the protection of children, the elderly and those with certain illnesses. To meet these standards in New England, we'll need to further reduce emissions of nitrogen oxides (NOx) and certain organic compounds that react to form ground level ozone, a harmful component of smog (Figure 2). And, given that much of the region's air pollution blows in from other parts of the country, the cutbacks will need to come both in New England and in upwind states outside of New England.

One tool in our arsenal is a new rule, to be implemented in 2003, that will require a 25 percent reduction of NOx emissions in 22 states in the eastern half of the country. EPA is encouraging states to meet the reduction by adopting a cap and trade program for large NOx sources, following a model approved last summer by a group of states, including four in New England. That program will halve emissions of NOx from utilities and large boilers in participating states, with trading reducing the cost by $179 million.

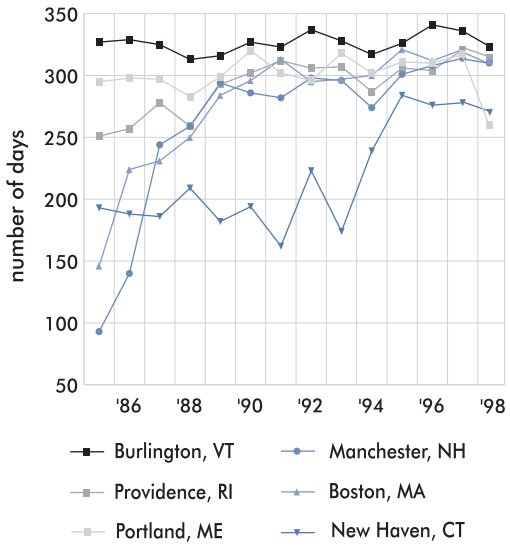
EPA also filed a lawsuit last year against power companies in the Mid-Atlantic and Midwest states, accusing them of illegally expanding and rebuilding their older plants without installing strict pollution control devices that are required for new or expanding power plants. The lawsuit comes amid a wave of deregulation in the electric industry which is encouraging more use of older, more polluting plants—many of them in New England.

EPA New England will continue to communicate with the public about air quality conditions. EPA's World Wide Web site on ozone and air quality, **www.epa.gov/region01/oms**, tracks smog levels from May through September, showing whether the air on a particular day is unhealthy and forecasting conditions for the next day. We also provide a free smog alert service, available through the web site or by calling 1-800-821-1237.

Transportation: Miles To Go

Clean air is directly related to cleaner vehicles and cleaner fuels. On both of these fronts, we've made huge progress. Today's new cars operate 90 percent cleaner than they did 30 years ago. And we've slashed lead levels in the air by

Figure 1. New England's Historical Trends in Healthy* Air Quality Days



(Based on County-wide Air Quality)
*air pollutant levels lower than 50% of the air quality standards
source: EPA AIRS

January 1, 1970
National Environmental Policy Act (NEPA) requiring an Environmental Impact Statement for every large project approved or funded by the federal government.

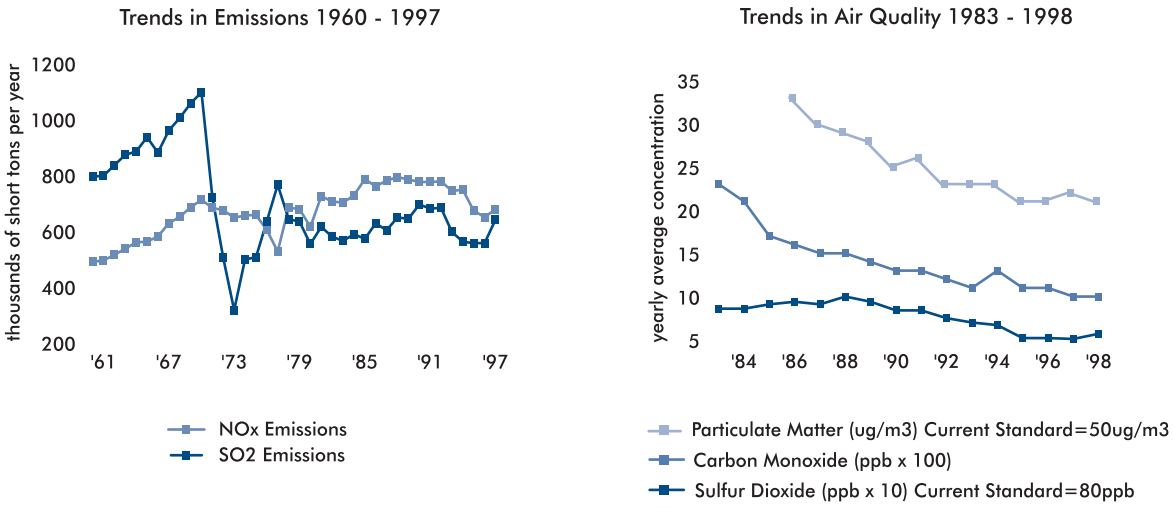
December 1970
Clean Air Act, amending previous air laws, setting auto emission standards & requiring state implementation plans to achieve air quality standards.

1970's

April 22, 1970
First Earth Day raises awareness of threats to the environment.

December 3, 1970
U.S. EPA Established signed into law by President Nixon.

Figure 2. Progress in Cleaning and Protecting New England Air Quality



source: EPA AIRS

98 percent due to the 27-year-old ban on leaded gasoline. Still, cars and trucks continue to be the region's largest source of air pollution, emitting about one-third of all volatile organic compounds, nitrogen oxides and air toxics into our air. The reason is simple: there are more cars on the road and the number of miles we're driving is skyrocketing. In just 30 years, the total number of vehicle miles driven in New England has nearly doubled. And the trend is accelerating (Figure 3).

EPA has launched a program to make our cars and trucks run even cleaner. Late last year, EPA finalized regulations that will result in cleaner gasoline and require for the first time that cars and light trucks meet the same emission requirements. The tougher light truck requirement is particularly important because it will bring popular sport utility vehicles (SUVs), which are classified as light trucks, under tighter air emission standards. The new standards, which will be phased in starting in 2004, are expected to produce a 77 percent reduction in car emissions and as much as a 95 percent reduction in truck and SUV emissions. Additional cutbacks will also be achieved through new vehicle inspection and maintenance programs recently implemented in Massachusetts and Rhode Island.

Indoor Air Quality and Asthma

The quality of the indoor air we breathe is an important health factor. Most people spend 90 percent of their time indoors, making indoor air pollution a serious issue in homes, schools, factories and offices. EPA studies have shown that indoor pollution levels may be as much as five times greater than outside levels. Sources of indoor air pollution include: burning fuels which result in elevated levels of carbon monoxide; tobacco smoke; pesticides; and biological contaminants such as dust mites, bacteria, fungi and viruses.

Children are especially vulnerable to harmful indoor air pollution because they breathe more air relative to their body

1972
Low Sulfur Fuel Reductions by New England States Begin, significantly lowering sulfur dioxide emissions.

1972
EPA Bans Use of DDT, a widely-used pesticide found to be cancer-causing and accumulating in the food chain.

1971
Lead-Based Paint Poisoning Act restricts lead-based paints in residential structures & bans lead paint on cribs and toys.

October 18, 1972
Federal Water Pollution Control Act requires states to establish water quality standards and reduce pollution from point sources through NPDES permits. EPA embarks on a major national commitment to upgrade sewage treatment facilities.

Keeping Kids Lead Safe

Eliminating lead from gasoline was a giant step forward in the country's battle to combat lead poisoning. However, exposure to lead-based paints continues to be a major problem in New England, especially in our urban areas where the housing is older. Despite banning lead-based paints in 1978, New England still has cities and tribal reservations where one-third of the children under the age of six have harmful lead levels in their blood, causing learning and behavior disorders. EPA New England has developed many initiatives to help residents and the regulated community prevent and reduce childhood lead poisoning, including:

- "Keep It Clean," a campaign informing "do-it-yourself" home renovators about the risk of lead poisoning in children and adults during the renovation and repainting of older homes.

- A Lead Safe Renovation interactive CD-ROM designed to meet federal training requirements for renovators and, "IMPACT", an interactive lead awareness training course on lead safe renovation for high schools and vocational and technical colleges.

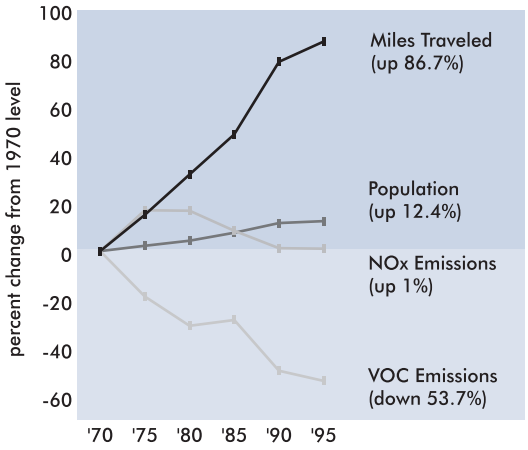
- "First Steps Day Care Provider Training" manuals, videos and CD-ROM available in English, Spanish, and a specially-designed Native American version, which explain the importance of blood lead screening, a healthful diet and basic preventive steps.

- "English as a Second Language-A Curriculum for Urban Living," was designed for adult education and other students whose primary language is not English and includes a major emphasis on lead poisoning prevention.

- "Community-Based Environmental and Lead Assessment and Educational Demonstration Program" which provides information to residents about lead in soil and low cost landscaping techniques for minimizing lead exposure.

For more information on lead safety, call EPA's lead hotline at 1-800-424-LEAD (1-800-424-5323) or EPA New England at 1-800-252-3402

Figure 3. Vehicle Emissions Decrease & Vehicle Use and Population Increase in New England



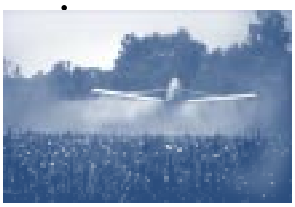
sources: U.S. Bureau of the Census and U.S. Federal Highway Administration

weight. That's why we've focused so much attention on air quality in schools. For the past five years, EPA New England has distributed thousands of our popular "Indoor Air Quality Tools for Schools" Action Kits to help school officials improve their indoor air quality. Last year we trained hundreds of school officials—including 300 in Massachusetts alone—and more than 100 schools in the region implemented air quality management plans.

Asthma is one of the most serious environmental health issues facing New Englanders today, particularly among our children where it is the leading cause of chronic illness. One-third of all pediatric emergency room visits are due to asthma. The problem is especially severe in large urban cities where there are higher concentrations of low-quality housing and air pollution. In Boston's Roxbury neighborhood, for example, an estimated 15 to 20 percent of teenagers are affected by asthma, five times the state average.

1972
Federal Environmental Pesticide Control Act requires manufacturers to provide toxicological information and register pesticides with EPA.

1973
Endangered Species Act establishes procedures for listing species as endangered or threatened, and requiring that federal agencies do not initiate or proceed with projects that "jeopardize the continued existence" of such species.



1972
EPA Provides Water and Wastewater Infrastructure for Tribal Housing in tandem with HUD and EDA.

1973
EPA Begins Ban To Phase Out Lead in Gasoline, resulting in 98% reduction in lead levels in air, and helping to reduce blood lead levels in children by 75%.

EPA New England has been very active on this issue. We are working with community-based coalitions in Lowell, Hartford, Boston and a half-dozen other cities to reduce asthma through "Healthy Homes" assessments and other outreach efforts. We've joined with the Physicians for Social Responsibility to create a curriculum for primary care physicians on environmental asthma triggers. And, in coordination with three Boston-area universities, we've launched a pilot project to study nine asthmatic families living in Boston public housing to evaluate the causes of the asthma and the barriers and benefits to intervention.

Drinking Water Protection

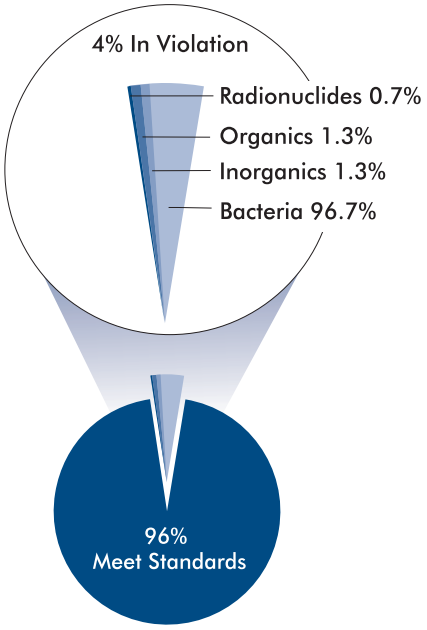
Drinking water supplies in New England are safer now than they've ever been (Figure 4). Currently, 96 percent of the region's 12,000 public water supply systems are meeting drinking water quality standards, up from 94 percent a year ago. Our success in this area is a direct result of the Safe Drinking Water Act (SDWA), which promotes a "multiple barrier" water protection approach combining source water protection, filtration, chemical disinfection and distribution systems safeguards.

EPA New England has been very aggressive in making sure that all of these protection measures are being utilized. For example, we provided $66 million last year to help New England communities fund improvements in drinking water treatment and distribution systems. We've also used our enforcement "stick" when we've had to. In fact, two of the Agency's biggest ongoing battles evolve around drinking water: our lawsuit to force the Massachusetts Water Resources Authority to provide drinking water filtration for two million Boston-area residents and our enforcement orders halting military training at the Massachusetts Military Reservation on Cape Cod due to groundwater protection concerns.

Among our newer priorities is the Source Water Protection Program designed to ensure the long-term protection of water supplies. A new requirement under the SDWA, the source water protection program requires all suppliers, in cooperation with the states, to identify and assess potential contamination threats to their drinking water supplies. As these assessments are completed, states, suppliers and citizens will work on ways to better protect those drinking water supplies.

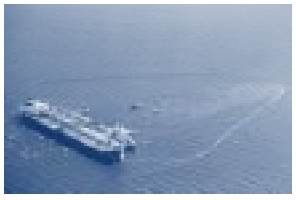
We're also working closely with businesses and teachers to heighten their awareness about drinking water. For businesses, we've launched an awards program to recognize those that have voluntarily worked to protect drinking

Figure 4. New England Public Water Systems Meeting Drinking Water Quality Standards



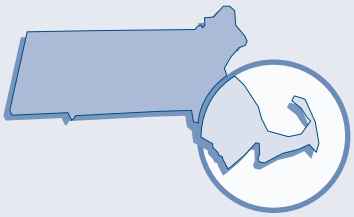
source: EPA Safe Drinking Water Information System, 1999

1973
Energy Crisis Grips the World, exacerbated by an oil embargo by Arab nations.



1974
First National Standards Limiting Industrial Water Pollution Set By EPA

December 1974
Safe Drinking Water Act—EPA begins setting health-based standards and physical/chemical treatment requirements for drinking water.



Fighting for Cape Cod's Drinking Water

Protecting Cape Cod's drinking water continues to be one of our biggest battles. The Massachusetts Military Reservation (MMR), a 22,000-acre property that has been used for military training activities since 1911, is located over a sole source aquifer that provides drinking water for 200,000 year-round and 500,000 seasonal residents of Cape Cod. Parts of the aquifer have been contaminated by fuel spills and other past practices at MMR's Otis Air Force Base. Otis is currently being cleaned up as a Superfund site.

Fearful that military training was causing even more damage to the groundwater, EPA New England in May 1997 suspended military training at Camp Edwards, including all use of live explosives, propellants, flares and lead bullets. It was the first time in our country's history that military training activities had been halted due to environmental and public health concerns. That same year, we ordered a series of groundwater studies that have produced evidence of serious groundwater and soil contamination.

As a result of these studies, EPA this year ordered the military to begin the process for the removal of unexploded ordinance from the base and to clean up contaminated groundwater and soils (available at: **www.epa.gov/region1**). The order, the first of its kind in the country, was issued under emergency provisions of the Safe Drinking Water Act. The federal law is specifically designed to protect underground drinking water supplies such as Cape Cod's aquifer.

water supplies. This year, we'll also be distributing flyers to businesses to highlight the importance of drinking water protection and provide examples of best management practices. We've also developed a groundwater curriculum for schools and an awards program for teachers who are doing exemplary work.

Last year was also the first year in which drinking water consumers all across the country received Consumer Confidence Reports from their community water suppliers. These easy-to-read reports tell consumers about the source of their water, the distribution system and compliance with drinking water rules. Consumers can expect to receive these reports in the mail every year, with the next reports due out by July 1, 2000.

Pesticides and Public Health Protection

Pesticides are widely used to control bacteria, bugs and other pests that can damage agricultural crops. At the same time, pesticides pose potential threats to human health, and in the environment can damage the fragile balance of our ecosystems.

EPA has placed a special emphasis on protecting our children from pesticides. A major milestone in this regard was working on, winning, and implementing the Food Quality Protection Act (FQPA) of 1996 that for the first time puts emphasis on protecting the health of infants and children from pesticide risks.

The FQPA paved the way for new regulations to better ensure that pesticides are used in ways that are more sensitive to human health and our ecosystems. In concert with those efforts, EPA has launched a Reduced Risk Initiative which encourages manufacturers to develop alternative pesticides that pose less risk to human health and to encourage farmers and others who use pesticides to find safer alternatives.

Implementation of the Food Quality Protection Act has already resulted in cancellation of some pesticide products and implementation of new restrictions on other pesticides.

1975
Energy Policy and Conservation Act includes provision establishing fuel economy standards for passenger cars and trucks in the U.S.

1976
The Argo Merchant Runs Aground off Nantucket, spilling 7.6 million gallons of oil.

1975
Car Makers Begin Installing Catalytic Converters In New Vehicles to meet EPA emission standards.

1976
Resource Conservation Recovery Act (RCRA) mandates cradle-to-grave regulation of hazardous waste.

New England's unique geology has resulted in some of the highest radon concentrations in the country.

Last year also was marked by the first-time distribution of an EPA *Pesticides and Food Consumer Right-To-Know* brochure, which was widely distributed in large supermarkets. The brochure is available on EPA's website at: **www.epa.gov/pesticides/food**

In the year ahead, we will continue our efforts to encourage manufacturers to develop pesticides with reduced risks to the public. We will do this by speeding up the registration process for certain pesticides and through other incentives. As part of our effort to make sure pesticides are adequately controlled and studied, we will also focus on better consumer labeling, children's health affects and developing new groundwater protection rules.

A Comprehensive Approach to Radon

Radon is a serious public health issue, particularly in New England. Radon is a colorless, odorless radioactive gas that comes from the natural radioactive breakdown of uranium in the ground. It can seep into basements and accumulate in indoor air. It can also be found in groundwater. When radon-containing groundwater is used for showers and other domestic purposes, the material is released to the air, potentially contributing to the risk of lung and stomach cancer.

Breathing radon in indoor air is the second leading cause of lung cancer in the United States, causing about 20,000 cases a year. Radon in drinking water is far less significant, causing an estimated 168 cancer deaths a year.

How do I get more information about radon?

Questions about radon in air can be answered by calling EPA New England (1-888-EPA-7341), the Radon Hotline (1-800-SOS-RADON), or the New England state programs. The website **www.epa.gov/iaq/radon** also has valuable information. For information on radon in groundwater, contact the Safe Drinking Water Hotline (1-800-426-4791) and EPA's Office of Drinking and Ground Water Internet site at: **www.epa.gov/safewater/radon.html**

New England State Radon Programs

Connecticut	(860)509-7367
Maine	(800)232-0842
Rhode Island	(401)222-2438
Vermont	(800)439-8550
Massachusetts	(413)586-7525 and(800)RADON95
New Hampshire	(800)852-3345 ext.4674

New England's unique geology has resulted in some of the highest radon concentrations in the country. About one in four New England homes has indoor radon levels above the recommended action level of 4 pCi/l. In addition, almost half of the region's population gets its drinking water from groundwater.

EPA has taken a comprehensive approach to reducing radon risk. Because the risk from radon in indoor air is so much greater, the Agency's new proposed radon standards for drinking water encourage states and communities to address radon in indoor air before pursuing expensive strategies to reduce radon in drinking water. EPA New England will also continue to support the state radon and drinking water programs with technical assistance and financial grants.

October 12, 1976
Toxic Substances Control Act sets stage for EPA's ban that will phase out production and use of cancer-causing PCBs.

August 1978
Love Canal in New York Found to be Contaminated by buried leaking chemical containers.

March 28,1979
Accident at Three Mile Island Nuclear Power Plant in Pennsylvania

1977
First Sign of Improvement in Waters As Dischargers Comply With NPDES Permit Requirements

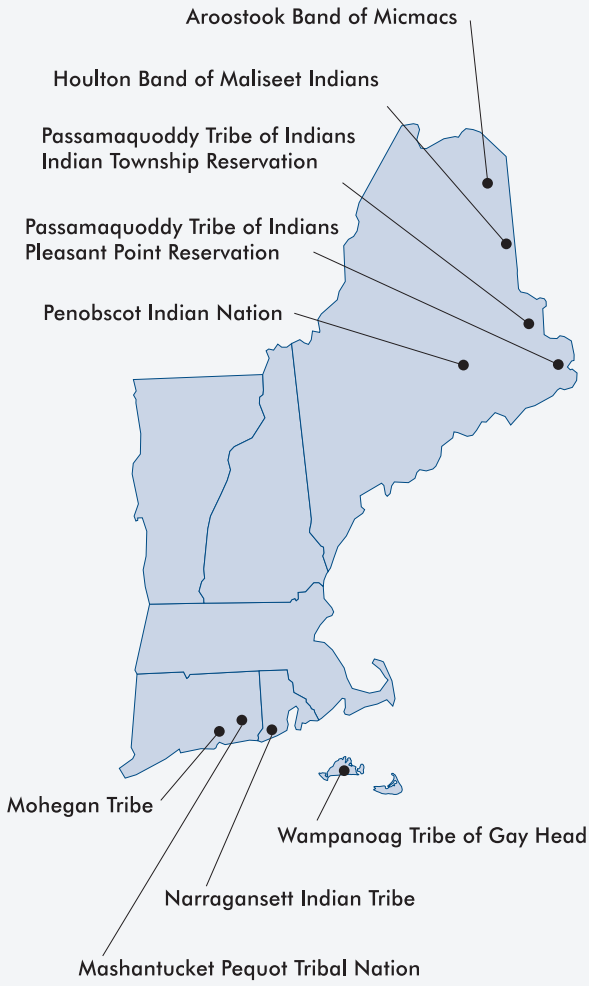
1978
EPA & Other Federal Agencies Ban Use of Chlorofluorocarbons (CFCs) as a propellant in most aerosol cans.

new england tribes

EPA New England and the nine sovereign Tribes in the region have forged close relationships, resulting in enhanced environmental protection on tribal lands and better cooperation on issues that cross boundaries. Among the highlights of this improved partnership was the New England Tribes and 13 federal natural resource agencies in the region signing a Memorandum of Understanding last year in which they agreed to work as equal partners in protecting the Tribes' natural resources. EPA New England's Emergency Response Team was also the first in the nation to bring Tribal members into response team operations.

Many of the collaborations between EPA and the Tribes are focused on public health and ecosystem protection. In what will provide the first regional, centralized look at air quality on Tribal lands, EPA is providing funds for Tribes to deploy air monitoring equipment in Maine and on Martha's Vineyard to collect and analyze mercury, acid rain and particulate matter data. EPA is also collaborating with the Passamaquoddy and Penobscot Tribes to study liver tissue in moose and deer to monitor toxics accumulation in subsistence game. A pilot mercury project with EPA and the Wampanoag and Passamaquoddy Tribes has also been launched to collect fish tissue to determine the health risks to Tribal members from eating fish. EPA is also assisting the Bureau of Indian Affairs with a multi-partner collaborative study to evaluate if dioxin, furans, and PCBs in the Penobscot River pose public health and environmental risks.

Recognizing that environmental protection of Tribal trust natural resources is critical for protecting each Tribes' traditions, culture and history, EPA will continue to provide increased funding for these and other protection efforts. Last year EPA New England provided $2.3 million in funds to assist the Tribes in these activities.



1981
Interagency Task Force on Acid Precipitation reports acid rain problem is intensifying in Northeast part of U.S. and Canada.

1982
Nuclear Waste Policy Act to provide long-term, safe disposal of the most dangerous radioactive waste from nuclear power plants and weapon production.

1980's

1980
Comprehensive Environmental Response, Compensation and Liability Act, referred to as Superfund, establishes a national program for toxic waste cleanups and requires EPA to establish lists of hazardous substances and the most hazardous toxic sites in the U.S.

1983
Superfund Issues First National Priorities List (NPL) – 406 sites nationwide, 38 in New England.